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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,845

07/01/2005

Robert C Livingston

56545-010204

1269

35893

7590

02/28/2008

GREENBERG TRAURIG, LLP

ONE INTERNATIONAL PLACE, 20th FL

ATTN: PATENT ADMINISTRATOR

BOSTON, MA 02110

EXAMINER

FORTUNA, ANA M

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

02/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,845	Applicant(s) LIVINGSTON, ROBERT C	
	Examiner Ana M. Fortuna	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/01/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by or alternatively rejected under U.S.C. 103 as being obvious over Pisani (US 4,990,260). Pisani teaches a system including all the elements of claim 1 (Figures 1-2, elements 20, 22, 26, 52, 54, 36, 72, 70). Patent '260 does further teaches the use of UV radiation as conventional in the art for water disinfection (column 3, last paragraph bridging column 4). The mixed bed deionizer is connected to the UV unit 36 is connected to UV unit, and mixed bed (60) is also fluidly connected with the UV unit; the UV unit is alternatively connected to another micron filter (72) before discharge from the system; Therefore, the cartridge is operatively connected to the deionizer, because it supplies fluid to the end use point, which water can also be treated by the mixed bed before discharge. It would have been further obvious to one skilled in the art at the time this invention was made to place the cartridge (72) after the ion exchange (60), e.g. to remove any final residue from the water. The skilled in the art at the time this invention was made have the knowledge to predict the final results when these two final units are changed around the system in a membrane water posttreatment. Using 5 micron filters is further disclosed in the patent (column 6, lines 10-column 7 line 52). Using carbon

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filter in the pretreatment is disclosed in the patent, providing the carbon in a powder or granular form would have been obvious to the skilled artisan, e.g. to provide a large carbon surface area, and increase the amount of contaminants removed as to claim 4, and 5 adding additional carbon filters to the system is considered cumulative, duplicating the separation step in the system. As to claim 6, dissolved and undissolved contaminants are expected to be remove from the RO membrane, separation of those components are inherent based on the membrane molecular weight cutoff. The operating pressure conditions for the RO are known to the skilled artisan. the pressure operation is depending of whether the membrane is a tight or a loose reverse osmosis, and/or on the degree of separation required. Valves are not shown in the system but considered and inherent part or an obvious arrangement, since valves are provided to avoid backflow in the system, backwash the system etc. The wave length is disclosed in the patent (column 8, first paragraph). As to claim 15, bypassing the ion exchange to minimize process costs when the fluid to be treated does not required that particular treatment would have been obvious to the skilled artisan. Regarding claims 16-17, using conventional water treatment modules of the art, and recycling reject water back to the membrane module would have been obvious to one skilled in this art at the time his invention was made, e.g. to obtain higher recovery.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additionally cited prior art teaches the alternative combination of

UV light and micron filters in post-treatment of water purified by reverse osmosis in any order, to refine the water, and alternatively produce water of high purity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M. Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ana M Fortuna
Primary Examiner
Art Unit 1797

/Ana M Fortuna/
Primary Examiner, Art Unit 1797